UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/038,089	01/02/2002	Edward I. Comer	06931.105003	3625

20786   7590   12/08/2003

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EXAMINER
MOORE, JAMES K

ART UNIT	PAPER NUMBER
2686	

DATE MAILED: 12/08/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Office Action Summary	Application No.	Applicant(s)
		10/038,089	COMER, EDWARD I.
		Examiner	**Art Unit**
		James K Moore	2686

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☐ Responsive to communication(s) filed on _____ .

2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
   closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) _1-4,6-9 and 11-28_ is/are pending in the application.

   4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) _1-4,6-9 and 11-28_ is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on _02 January 2002_ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

   Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) ☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

   If approved, corrected drawings are required in reply to this Office action.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   a)☐ All b)☐ Some * c)☐ None of:

   1. ☐ Certified copies of the priority documents have been received.

   2. ☐ Certified copies of the priority documents have been received in Application No. _____ .

   3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage
      application from the International Bureau (PCT Rule 17.2(a)).
   * See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

   a) ☐ The translation of the foreign language provisional application has been received.

15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _7_ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Objections

1.   Claims 6, 7, and 20 are objected to because of the following informalities:

In line 3 of claims 6 and 7, "an the operating environment" should be changed to

"an operating environment."

In line 3 of claim 20, "Consumer Digital Protocol Data" should be changed to

"Cellular Digital Packet Data".

Appropriate correction is required.

Claim Rejections - 35 USC § 112

2.   The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of
> making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the
> art to which it pertains, or with which it is most nearly connected, to make and use the same and shall
> set forth the best mode contemplated by the inventor of carrying out his invention.

3.   Claims 1-4, 6-8, and 23-28 are rejected under 35 U.S.C. 112, first paragraph, as

failing to comply with the written description requirement. The claim(s) contains subject

matter which was not described in the specification in such a way as to reasonably

convey to one skilled in the relevant art that the inventor(s), at the time the application

was filed, had possession of the claimed invention.

Claims 1, 23, and 26 include the limitation "a plurality of wireless data transport

(WDT) transceivers *each* capable of supporting wireless data communications with the

CMR system by a plurality of WDTs". See lines 3-5. The specification does not

disclose that a transceiver is capable of supporting more than one WDT.

Claim 25 includes the limitation "the selection algorithm based on a heuristic

process *having* a learning capability *for* prior message communication operations."

Page 12, lines 31-33 of the specification disclose that the selection algorithm "can be

based on a heuristic process *to support* a learning capability *based upon* prior

communication operations", however this statement does not have the same meaning

as the claimed limitation.

Claim Rejections - 35 USC § 103

4.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5.   Claims 1-3, 6-9, 11-13, 15, 16, 20-24, and 26-28 are rejected under 35 U.S.C.

103(a) as being unpatentable over Caci (U.S. Patent No. 6,154,658) in view of Gardner

(U.S. Patent No. 6,370,135).

Regarding claim 1, Caci discloses a system for communicating a message

comprising data content in a cellular mobile radiotelephone system. The system

comprises a plurality of wireless data transport transceivers (CDPD modem 72 and

circuit switched cellular radio 34) capable of supporting wireless data communications

with the system by a plurality of transports (CDPD and circuit-switched cellular). Each

transceiver is coupled to an antenna (38, 74) and communicates the message with a

transport via the antenna. See Figure 2; col. 4, lines 38-61; col. 8, lines 7-20; and col.

9, lines 45-63. The system also comprises a controller (computer 12) that identifies

each of the transports operational within the system for transporting the message and to

select one of the transceivers corresponding to one of the identified transports for

communicating the message, and a user interface (microphone 42, speaker 44) coupled

to the controller to provide a unified interface to the transceivers. It is inherent that the

system comprises a normalization function, coupled to each transceiver and to the

controller, to transform the message into a format acceptable for processing by the

selected transceiver. The communications system communicates different message

using different transports available within an operating environment. Caci does not

disclose that the transceivers are selected in response to analyzing characteristics of

the data content of the message based upon selection criteria on a dynamic, real time

basis.

However, Gardner discloses a system and method for communicating messages

comprising data content in a cellular mobileradiotelephone system. The system

comprises a subscriber station capable of communicating using two wireless data

transports, a CDPD packet-switched transport and a circuit-switched transport. The

subscriber station selects the most appropriate transport for message communication

by analyzing the data content of messages in view of predetermined selection criteria

(i.e., file size) on a message-by-message basis. This allows the subscriber station to

communicate messages using the least expensive transport. See Abstract; col. 12, line 54 through col. 14, line 14; and col. 15, line 63 through col. 16, line 34. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Caci with Gardner, such that the transceivers are selected in response to analyzing characteristics of the data content of the message based upon selection criteria (file size) on a dynamic, real time basis, in order to minimize the cost of communicating the message.

Regarding claim 2, Caci in view of Gardner teaches all of the limitations of claim 1, and it is inherent that Caci's system comprises a memory (e.g., a buffer) coupled to the controller, for storing the data content of the message to be communicated, before it is transferred to one of the transceivers.

Regarding claim 3, Caci in view of Gardner teaches all of the limitations of claim 1, and Caci also discloses that the transceivers may be aggregated to form a transceiver system implemented as a single monolithic component. See col. 12, lines 13-17.

Regarding claim 6, Caci in view of Gardner teaches all of the limitations of claim 1, and Caci also discloses that the controller identifies one of the transports for transporting the message by identifying each available transport in the operating environment. See col. 9, lines 45-62. Gardner discloses that the transceiver associated with the transport to communicate the message is chosen based upon the volume of the data content of the message. See col. 15, line 63 through col. 16, line 34.

Regarding claim 7, Caci in view of Gardner teaches all of the limitations of claim

1, and Caci also discloses that the controller identifies one of the transports for

transporting the message by identifying each available transport in the operating

environment. See col. 9, lines 45-62. Gardner discloses that the transceiver associated

with the transport to communicate the message is chosen based upon the cost of the

message communication. See col. 15, line 63 through col. 16, line 34.

Regarding claim 8, Caci in view of Gardner teaches all of the limitations of claim

1, and Gardner also discloses that the controller identifies the transport for transporting

the message on a message-by-message basis. See col. 15, line 63 through col. 16,

line 34.

Regarding claim 9, Caci discloses a computer-implemented process for

communicating a message comprising data content in a cellular mobileradiotelephone

system. The process comprises identifying each available wireless data transport

(CDPD and circuit-switched cellular) in an operating environment of the system by

monitoring the operating environment, selecting one identified transport to support the

communication of the message, and communicating the message with the selected

transport in the system. See Figure 2; col. 4, lines 38-61; col. 8, lines 7-20; and col. 9,

lines 45-63. Caci does not disclose that the transport selection is performed by

analyzing the data content of the message in view of predetermined selection criteria

applied on a message-by-message basis to determine the most appropriate transport

for message communication. However, as mentioned in reference to claim 1 above,

this feature is taught by Gardner. It would have been obvious to one of ordinary skill in

the art at the time of the invention to modify Caci with Gardner, such that the transport

selection is performed by analyzing the data content of the message in view of

predetermined selection criteria (file size) applied on a message-by-message basis to

determine the most appropriate transport for message communication, in order to

minimize the cost of communicating the message.

Regarding claim 11, Caci in view of Gardner teaches all of the limitations of claim

9, and Gardner also discloses that the transport is selected based upon the volume of

the data content of the message. See col. 15, line 63 through col. 16, line 34.

Regarding claim 12, Caci in view of Gardner teaches all of the limitations of claim

9, and Gardner also discloses that the transport is selected based upon the cost of

conveying the message in the system. See col. 15, line 63 through col. 16, line 34.

Regarding claim 13, Caci in view of Gardner teaches all of the limitations of claim

9, and Caci also discloses that the transport is selected based upon the priority (e.g.,

emergency) assigned to the communication of the message by the system. See col. 9,

lines 45-63.

Regarding claim 15, Caci in view of Gardner teaches all of the limitations of claim

9, and Caci also discloses that the steps are completed by instructions of a computer-

readable medium. See col. 9, lines 45-63.

Regarding claim 16, Caci discloses a memory storage device (computer 12)

comprising computer-executable instructions for communicating a message comprising

data content in a cellular mobileradiotelephone system. The instructions comprise

identifying each wireless data transport in an operating environment of the system in

response to monitoring the operating environment, selecting one identified transport to support the communication of the message, and communicating the message with the selected transport in the system. See Figure 2; col. 4, lines 38-61; col. 8, lines 7-20; and col. 9, lines 45-63. Caci does not disclose that the transport is selected based only upon an analysis of the volume of the data content on a message-by-message basis, or that each transport is assigned to support the communication of messages comprising a different predetermined range of data content volume. However, these features are disclosed by Gardner, which teaches that such features cause the cost of communicating messages to be minimized. See col. 16, lines 13-34. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Caci with Gardner, such that the transport is selected based only upon an analysis of the volume of the data content on a message-by-message basis, and each transport is assigned to support the communication of messages comprising a different predetermined range of data content volume, in order to minimize the cost of communicating messages.

Regarding claim 20, Caci in view of Gardner teaches all of the limitations of claim 16, and Gardner also discloses that a CDPD transport is chosen when the volume of the data content is large (up to 2.2 kb). See col. 16, lines 13-34.

Regarding claim 21, Caci in view of Gardner teaches all of the limitations of claim 16, and Gardner also discloses that a voice-channel modem transport (the continuous, or circuit-switched mode) is chosen when the volume of the data content is very large (greater than 2.2 kb). See col. 16, lines 13-34.

Regarding claim 22, Caci discloses a memory storage device (computer 12)

comprising computer-executable instructions for communicating a message comprising

data content in a cellular mobileradiotelephone system. The instructions comprise

identifying each wireless data transport in an operating environment of the system in

response to monitoring the operating environment, and selecting one identified wireless

data transport as a preferred transport medium to support the communication of the

message. Caci discloses that a CDPD transport will normally be selected as the

preferred transport medium because it is cost-effective. See Figure 2; col. 4, lines 38-

61; col. 8, lines 7-20; and col. 9, lines 45-63. Caci does not disclose that the transport is

selected based upon an analysis of the volume of the data content, or that each

transport is assigned to support the communication of message comprising a different

predetermined range of data content volume. However, Gardner teaches that circuit-

switched transports may be more cost-effective than conventional CDPD packet-

switched transports for larger messages. Gardner also teaches selecting transports

based upon an analysis of the volume of data content, and assigning transports to

support the communication of messages comprising different predetermined ranges of

data content volume, in order to utilize the most cost-effective transport. See col. 16,

lines 13-34. It would have been obvious to one of ordinary skill in the art at the time of

the invention to modify Caci with Gardner, such that the transport is selected based

upon an analysis of the volume of the data content, and each transport is assigned to

support the communication of message comprising a different predetermined range of

data content volume, in order to select the most cost-effective transport as the preferred transport.

Further in regards to claim 22, Caci also discloses that an identified wireless data transport (CDPD) may be selected to support the communication of the message based upon alternative selection criteria other than data content volume, the alternative selection criteria comprise priority status of the message communication (emergency). See col. 9, lines 57-59. In an emergency situation, if the wireless data transport selected as the preferred transport medium is the wireless data transport selected based upon the alternative selection criteria (CDPD), the message will be communicated with the preferred transport medium, otherwise the message will be communicated with the transport selected based upon the alternative selection criteria.

Regarding claim 23, Caci discloses a system for communicating a message comprising data content in a cellular mobile radiotelephone system. The system comprises a plurality of wireless data transport transceivers (CDPD modem 72 and circuit switched cellular radio 34) capable of supporting wireless data communications with the system by a plurality of transports (CDPD and circuit-switched cellular). Each transceiver is coupled to an antenna (38, 74) and communicates the message with a transport via the antenna. See Figure 2; col. 4, lines 38-61; col. 8, lines 7-20; and col. 9, lines 45-63. The system also comprises a controller (computer 12) that identifies each of the transports operational within the system for transporting the message and to select one of the transceivers corresponding to one of the identified transports for communicating the message, and a user interface (microphone 42, speaker 44) coupled

to the controller to provide a unified interface to the transceivers. It is inherent that the system comprises a normalization function, coupled to each transceiver and to the controller, to transform the message into a format acceptable for processing by the selected transceiver and to transform the data content received by the selected transceiver for presentation via the user interface. The normalization function inherently comprises a plurality of transformation processes (i.e., coding and decoding) to suppor the operation of the transceivers. Caci does not disclose that the transceivers are selected based upon selection criteria applied to the data content of the message.

However, Gardner discloses a system and method for communicating messages comprising data content in a cellular mobileradiotelephone system. The system comprises a subscriber station capable of communicating using two wireless data transports, a CDPD packet-switched transport and a circuit-switched transport. The subscriber station selects the most appropriate transport for message communication by analyzing the data content of messages in view of predetermined selection criteria (i.e., file size) on a message-by-message basis. This allows the subscriber station to communicate messages using the least expensive transport. See Abstract; col. 12, line 54 through col. 14, line 14; and col. 15, line 63 through col. 16, line 34. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Caci with Gardner, such that the transceivers are selected based upon selection criteria applied to the data content of the message, in order to minimize the cost of communicating the message.

Regarding claim 24, Caci in view of Gardner teaches all of the limitations of claim

23, and Gardner also discloses that the selection criteria comprises data content

volume. See col. 15, line 63 through col. 16, line 34.

Regarding claim 26, Caci discloses a system for communicating a message

comprising data content in a cellular mobile radiotelephone system. The system

comprises a plurality of wireless data transport transceivers (CDPD modem 72 and

circuit switched cellular radio 34) capable of supporting wireless data communications

with the system by a plurality of transports (CDPD and circuit-switched cellular). Each

transceiver is coupled to an antenna (38, 74) and communicates the message with a

transport via the antenna. See Figure 2; col. 4, lines 38-61; col. 8, lines 7-20; and col.

9, lines 45-63. The system also comprises a controller (computer 12) that identifies

each of the transports operational within the system for transporting the message and to

select one of the transceivers corresponding to one of the identified transports for

communicating the message, and a user interface (microphone 42, speaker 44) coupled

to the controller to provide a unified interface to the transceivers. It is inherent that the

system comprises a normalization function, coupled to each transceiver and to the

controller, to transform the message into a format acceptable for processing by the

selected transceiver. It is also inherent that the computer 12 comprises a memory for

storing firmware comprises instructions for execution by the controller to enable

communication by the transceiver, and for storing data comprising the identity of each

transport supported by an operating environment. Caci does not disclose that the

transceivers are selected in response to analyzing characteristics of the data content of the message based upon selection criteria.

However, Gardner discloses a system and method for communicating messages comprising data content in a cellular mobileradiotelephone system. The system comprises a subscriber station capable of communicating using two wireless data transports, a CDPD packet-switched transport and a circuit-switched transport. The subscriber station selects the most appropriate transport for message communication by analyzing the data content of messages in view of predetermined selection criteria (i.e., file size) on a message-by-message basis. This allows the subscriber station to communicate messages using the least expensive transport. See Abstract; col. 12, line 54 through col. 14, line 14; and col. 15, line 63 through col. 16, line 34. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Caci with Gardner, such that the transceivers are selected in response to analyzing characteristics of the data content of the message based upon selection criteria (file size), in order to minimize the cost of communicating the message.

Regarding claim 27, Caci in view of Gardner teaches all of the limitations of claim 26, and it is inherent that the memory in Caci's computer 12 stores data input by a user via the user interface (microphone 42) for transmission by the selected transceiver, since speech data is encoded in encoder 50, and passes through computer 12 before being transferred to one of the transceivers. See Figure 2 and col. 10, lines 27-42.

Regarding claim 28, Caci in view of Gardner teaches all of the limitations of claim 26, and it is inherent that the memory stores an instruction set executable by the

controller and normalization data (the data to be normalized and transmitted) for use by the normalization function.

6.   Claims 4, 14, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Caci in view of Gardner as applied to claims 1, 9, and 16 above, and further in view of well known prior art.

Regarding claims 4, 14, and 17, Caci in view of Gardner teaches all of the limitations of claims 1, 9, and 17, and Caci also discloses that the transports comprise CDPD and voice-channel modem transports. See col. 9, lines 45-63. Caci in view of Gardner does not teach that the transports comprise overhead control channel or SMS. However, the examiner takes Official Notice that it is well known in the art that overhead control channel and SMS transports are inexpensive transports for communicating short messages. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combination of Caci and Gardner with well known prior art, such that the transports also comprise overhead control channel and SMS transports, in order to provide inexpensive transports for communicating short messages.

7.   Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Caci in view of Gardner as applied to claim 16 above, and further in view of Roach, Jr. et al. (U.S. Patent No. 5,546,444).

Regarding claim 18, Caci in view of Gardner teaches all of the limitations of claim

16, but does not teach that an overhead control channel transport is chosen when the

volume of the data content is small. However, Roach discloses that an overhead

control channel transport is suitable for transmitting small messages and that its use

conserves frequency spectrum allocated for voice channels in a CMR system. See col.

4, lines 22-40 and col. 6, lines 33-55. Therefore, it would have been obvious to one of

ordinary skill in the art at the time of the invention to further modify the combination of

Caci and Gardner with Roach, such that an overhead control channel transport is

chosen when the volume of the data content is small, in order to conserve frequency

spectrum allocated for voice channels in the system.

8.   Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Caci in

view of Gardner as applied to claim 16 above, and further in view of Gustafsson (U.S.

Patent No. 6,424,841).

Regarding claim 19, Caci in view of Gardner teaches all of the limitations of claim

16, but does not teach that an SMS transport is chosen when the volume of the data

content is medium. However, Gustafsson teaches that an SMS transport is a cost

effective means for the transmission of messages less than 140 bytes, which may be

characterized as a medium data content volume. See col. 1, line 58 through col. 2, line

7 and col. 5, line 66 through col. 6, line 10. Therefore, it would have been obvious to

one of ordinary skill in the art at the time of the invention to modify the combination of

Caci and Gardner with Gustaffson, such that an SMS transport is chosen when the

volume of the data content is medium, in order to provide a more cost effective means of transmitting the message.

Citation of Pertinent Prior Art

9.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Toms (WO 95/25407) discloses an apparatus that transmits data over a CDPD system and a wireless circuit switched system.

Conclusion

10.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ken Moore, whose telephone number is (703) 308-6042. The examiner can normally be reached on Monday-Friday from 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marsha Banks-Harold, can be reached at (703) 305-4379.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal

Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or

proceeding should be directed to the Technology Center 2600 Customer Service Office

whose telephone number is (703) 306-0377.

Ken Moore

9/23/03

CHARLES APPIAH
PRIMARY EXAMINER